### 07-31-2020 LETTING ITEM 096

## STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

## FAR. COUNTY SIREIS NO.

### FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT = 2100 (2019)

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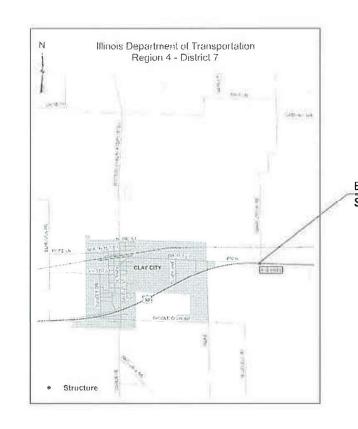
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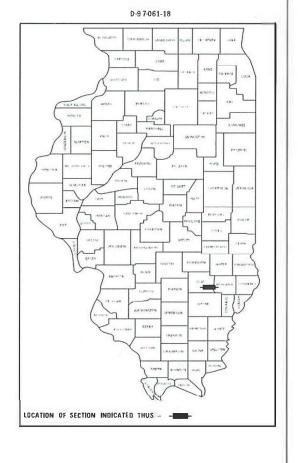
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## PROPOSED HIGHWAY PLANS

FAP ROUTE 327 (US 50)
SECTION D7 BRIDGE REPAIRS 2020–1
PROJECT NHPP–ZBKC(687)
BRIDGE JOINT REPAIR, BRIDGE DECK REPAIR
CLAY COUNTY

C-97-108-18





## BRIDGE DECK REPAIRS SN 013-0004 STA. 1227 + 00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED April 8

20

REGIONAL ENGINEER

May 8, 2020

ENGINEER OF DESIGN AND ENUIRONMENT

May 8, 2020

DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION 13

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. - MS

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS. THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1-800-892-0123
OR 811

PROJECT ENGINEER DEBRA BARRETT PROJECT MANAGER KYLE PRICE

CONTRACT NO. 74874

### **INDEX OF SHEETS**

SHEET NO. DESCRIPTION

1 COVER SHEET
2 INDEX, GENERAL NOTES, HIGHWAY STANDARDS
3-4 SUMMARY OF QUANTITIES
5 TYPICAL CROSS SECTION
6 SCHEDULE OF QUANTITIES
7 BASE COURSE WIDENING, SHOULDERS
8-9 TRAFFIC CONTROL LAYOUT DETAILS
10-19 BRIDGE PLANS

### **HIGHWAY STANDARDS**

STANDARD NO.	DESCRIPTION
000001-07	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF INCH AND FOOT
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 M) AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701201-05	LANE CLOSURE 2L2W - DAY ONLY
701301-04	LANE CLOSURE 2L2W - SHORT TIME OPERATION
701321-18	LANE CLOSURE 2L2W - BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE 2L2W - PAVEMENT WIDENING 45 MPH OR MORE
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

### **GENERAL NOTES**

THE WORK ON THIS PROJECT IS LOCATED ON US 50 OVER THE LITTLE WABASH RIVER, TWO MILES EAST OF CLAY CITY.

THE WORK ON THIS PROJECT CONSISTS OF HMA BASE COURSE WIDENING, BRIDGE JOINT REPAIR, AND BRIDGE DECK REPAIRS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

HOT MIX ASPHALT

BITUMINOUS MATERIALS (TACK COAT)

MILLED SURFACE

BETWEEN HMA LIFTS

GRANULAR MATERIAL

112 LB/SQ YD/IN

0.05 LB/SQ FT

2.05 TONS/CU YD

USER NAME = steffenmk	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/8/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, GENERAL NOTES,

& HIGHWAY STANDARDS

SHEET OF SHEETS STA. TO STA.

FA.P. SECTION COUNTY SHEETS NO.

327 D7 BRIDGE REPAIRS 2020-1 CLAY 19 2

CONTRACT NO. 74-874

	SUMMARY OF QUANTITIES				STRUCTION TYPE	CODE
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	0013 80% FED 20% STATE		
35650500	BASE COURSE WIDENING 10"	SO YD	219	219		
44004250	PAVED SHOULDER REMOVAL	SQ YD	219	219		
50102400	CONCRETE REMOVAL	CU YD	32	32		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	31.7	31.7		
50300260	BRIDGE DECK GROOVING	SQ YD	821	821		
30300200	BNIDGE BEEK GROOVING	30 10	021	021		
50300300	PROTECTIVE COAT	SQ YD	58	58		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	2230	2230		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3240	3240		
50800515	BAR SPLICERS	EACH	68	68		
52000110	PREFORMED JOINT STRIP SEAL	FOOT	168	168		
52100520	ANCHOR BOLTS, 1"	EACH	48	48		
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	3	3		
67100100	MOBILIZATION	L SUM	1	1		
	MODILIZATION	L JUM	1	1		

	SUMMARY OF QUANTITIES			CONS	STRUCTION TYPE	CODE
CODE NO	ITEM	UNIT	TOTAL QUANTITIES	0013 80% FED 20% STATE		
				20% STATE		
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD	EACH	1	1		
	701321					
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701201					
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701326					
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4	4		
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1		
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	1340	1340		
70107007	PAVEMENT MARKING BLACKOUT TAPE, 7"	FOOT	132	132		
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		
70700150	CHORT TERM DAVEMENT MARKING DEMOVAL	50 57	C 7.E	C 7 E		
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	635	635		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600	600		
		1.23.				
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	600		
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-	EACH	2	2		
	REDIRECTIVE), TEST LEVEL 3					
				•	•	

USER NAME = steffenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 / in.	CHECKED -	REVISED -
PLOT DATE = 4/8/2020	DATE -	REVISED -

SCALE:

	SUMMARY OF QUANTITIES				TRUCTION TYPE CODE	-	SUMMARY	ΩF	QUANTITIES			CONS	TRUCTION TYPE	. CODE
CODE NO	ITEM UT QUANTITIES	UNIT	TOTAL QUANTITIES	0013 80% FED		CODE NO	JOIVINIAITI	ITEM	GUANTITLES	UNIT	TOTAL QUANTITIES			
CODE NO	I I EW	UNIT	COANTITIES	20% STATE		CODE NO		TIEW		ONIT	QUANTITIES			
70600350	IMPACT ATTENUATORS, RELOCATE (NON-	EACH	2	2										
	REDIRECTIVE), TEST LEVEL 3													
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	604	604										
20001899	JACK AND REMOVE EXISTING BEARINGS	EACH	12	12										
0012110	BRIDGE DECK FLY ASH OR GGBF SLAG CONCRETE	SQ YD	845	845										
	OVERLAY, 2 1/4"													
0012142	BRIDGE DECK SCARIFICATION 2 1/4"	SQ YD	845	845										
0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO	SQ FT	74	74		-								
	OR LESS THAN 5 INCHES)					-								
0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SO YD	6	6										
0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SO YD	62	62		-								
														_
						-								

\* SPECIALTY ITEM

USER NAME = steffenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 4/8/2020	DATE -	REVISED -

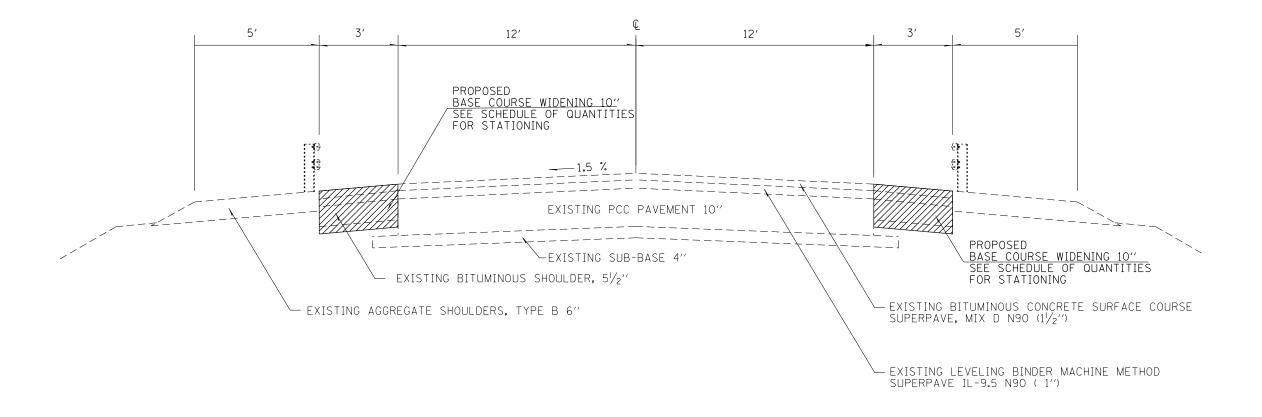
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS				
SUMMARY OF QUANTITIES							D7 BRIDGE REPAIRS 2020-1	CLAY	19	4
								CONTRACT	NO. 74	1874
SCALE: SHEET OF SHEETS STA. TO STA.							ILLINOIS FED. A	ID PROJECT		

### TYPICAL SECTION

STA 1222+49.16 TO STA 1225+65.83 STA 1228+34.17 TO STA 1231+40.66

STA 1225+65.83 TO STA 1228+34.17 (BRIDGE OMISSION)



USER NAME = steffenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 150.0000 / in.	CHECKED -	REVISED -
PLOT DATE = 4/8/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE:

					F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
TYPICAL SECTIONS							D7 BRIDGE REPAIRS 2020-1	CLAY	19	5
								CONTRACT	NO. 74	1874
	SHEET OF SHEETS STA. TO STA.						ILLINOIS FED. A	ID PROJECT		

### **SCHEDULE OF QUANTITIES**

## PAVEMENT MARKING BLACKOUT TAPE SHORT TERM PAV. MARKING REMOVAL

STATION	ТО	STATION	LOCATION	PAVEMENT MARKING BLACKOUT TAPE, 7" 70107007 (FEET)	PAVEMENT MARKING BLACKOUT TAPE, 5" 70107005 (FEET)	SHORT TERM PAVEMENT MARKING REMOVAL 70300150 (SQ FT)
1224+61.33		1229+38.66	EOP LT (STAGE 1)		477.3	198.9
1222+59.13		1222+64.29	EOP RT (STAGE 1)		5.2	2. 1
1222+64.29	IS	1222+80.48	STATION EQUATION			
1222+80.48		1223+96.72	EOP RT (STAGE 1)		116.2	48.4
1230+03.35		1230+80.66	EOP RT (STAGE 1)		77. 3	32.2
1224+61.34		1229+38.67	EOP RT (STAGE 2)		477.3	198.9
1223+25.34		1223+96.48	EOP LT (STAGE 2)		71.1	29.6
1230+03.34		1231+18.67	EOP LT (STAGE 2)		115.3	48.1
1222+49.13		1222+64.29	SKIPS - STOP BAR TO TEMP BARRIER (STAGE 1)	4.0		2. 3
1222+64.29	IS	1222+80.48	STATION EQUATION			
1222+80.48		1225+00.00	SKIPS - STOP BAR TO TEMP BARRIER (STAGE 1)	57.6		33.6
1229+00.00		1231+44.72	SKIPS - STOP BAR TO TEMP BARRIER (STAGE 1)	64.2		37.5
1222+49.13		1222+64.29	RPM - STOP BAR TO TEMP BARRIER	0.2		0.1
1222+64.29	IS	1222+80.48	STATION EQUATION			
1222+80.48		1225+00.00	RPM - STOP BAR TO TEMP BARRIER	2.7		1.6
1229+00.00		1231+40.66	RPM - STOP BAR TO TEMP BARRIER	3. 0		1.8
			TOTALS	132	1340	635

### **PAINT PAVEMENT MARKING**

STATION	ТО	STATION	LENGTH (FEET)	PAINT PAVEMENT MARKING - LINE (4") 78001110 (FEET)	
1225+65.83		1228+34.17	268	70	SKIPS
1225+74.52		1228+41.10	267	267	EOP LT
1225+58.90		1228+25.49	267	267	EOP RT
			TOTAL =	604	

## BASE COURSE WIDENING 10" PAVED SHOULDER REMOVAL

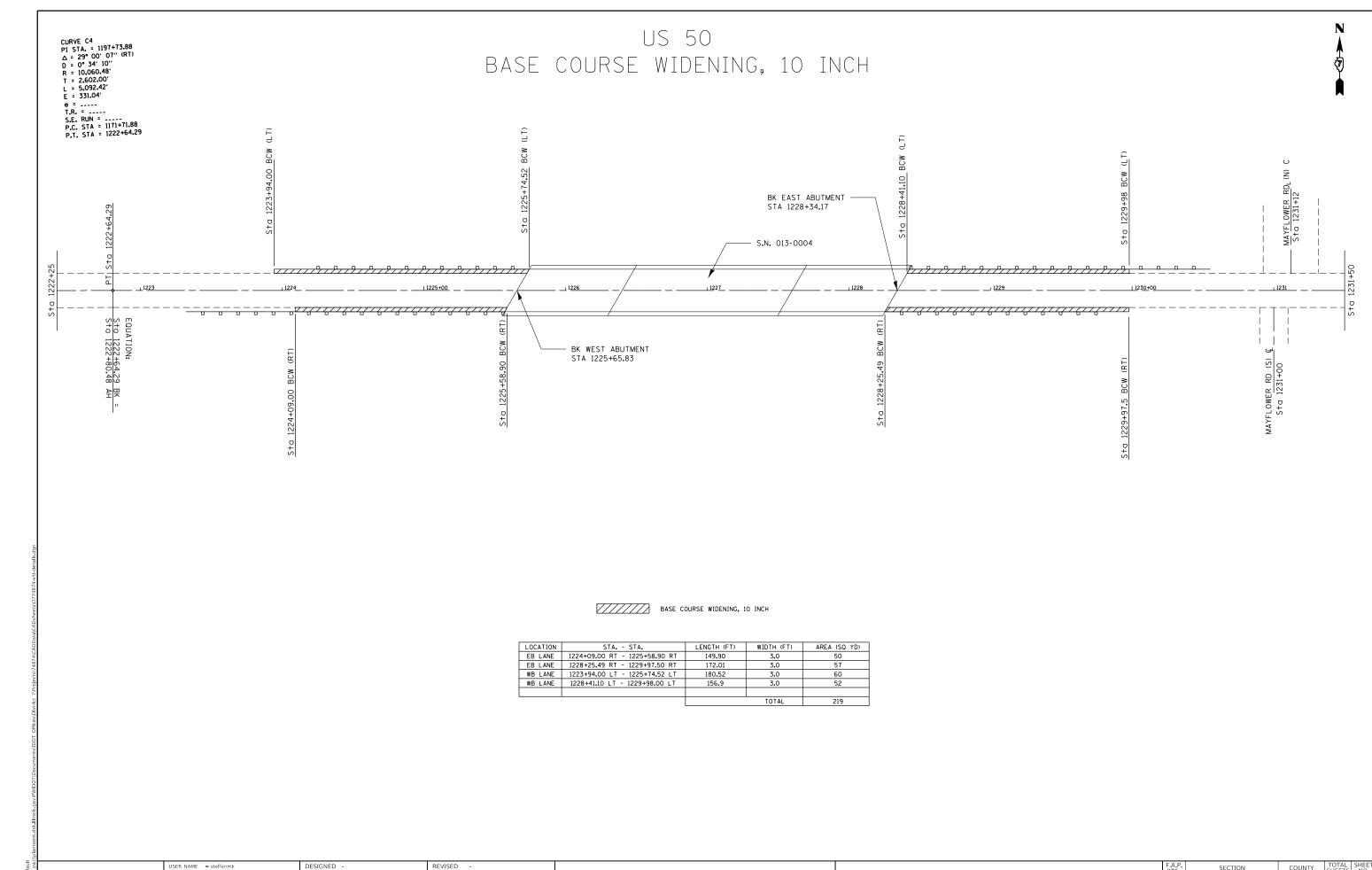
STATION	ТО	STATION	LOCATION	LENGTH (FEET)	WIDTH (FEET)	BASE COURSE WIDENING 10" 35650500 (SQ YD)	PAVED SHOULDER REMOVAL 44004250 (SQ YD)
1224+09.00		1225+58.90	RT	149.9	3	50	50
1228+25.49		1229+97.50	RT	172.0	3	57	57
1223+94.00		1225+74.52	LT	180.5	3	60	60
1228+41.10		1229+98.00	LT	156.9	3	52	52
					TOTAL	219	219

### TEMPORARY CONCRETE BARRIER

STATION	ТО	STATION	LENGTH (FEET)	TEMPORARY CONCRETE BARRIER 70400100 (FEET)	RELOCATE TEMPORARY CONCRETE BARRIER 70400200 (FEET)
1223+96.48		1225+35.33	139.37	137.5	137.5
1225+35.33		1228+64.67	329.34	325	325
1228+64.67		1230+03.34	139.37	137.5	137.5
			TOTAL =	600.0	600.0

USER NAME = steffenmk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 4/8/2020	DATE -	REVISED -

					F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	SCHEDULE	: OF QUA	ANTITIES	327	327 D7 BRIDGE REPAIRS 2020-1 CLAY 19		19	6	
							CONTRACT	NO. 78	3474
SHEET	OF	SHEETS	STA.	TO STA.		ILLINOIS FED. A	AID PROJECT		



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DATE

PLOT DATE = 4/8/2020

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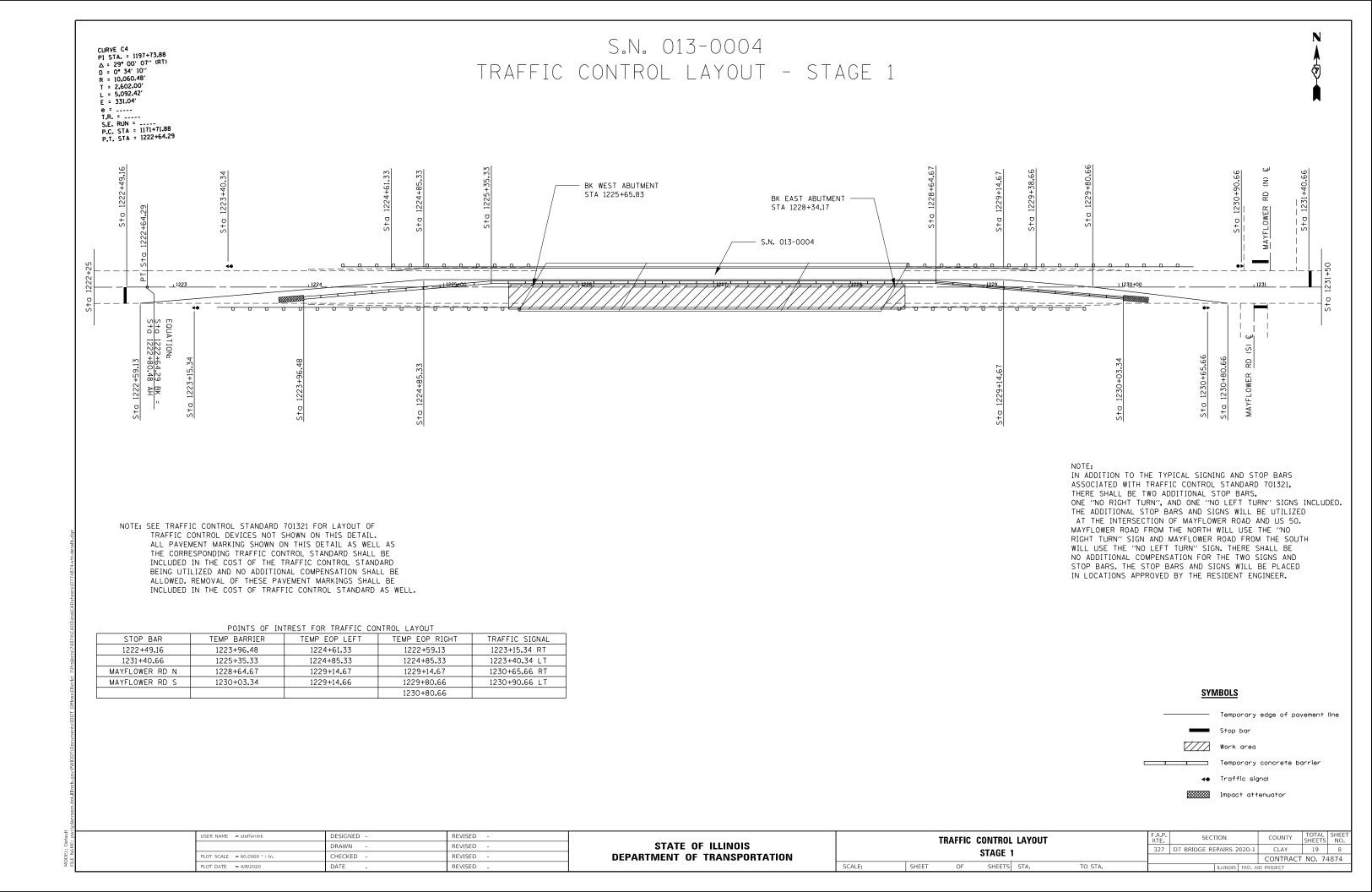
STATE OF ILLINOIS

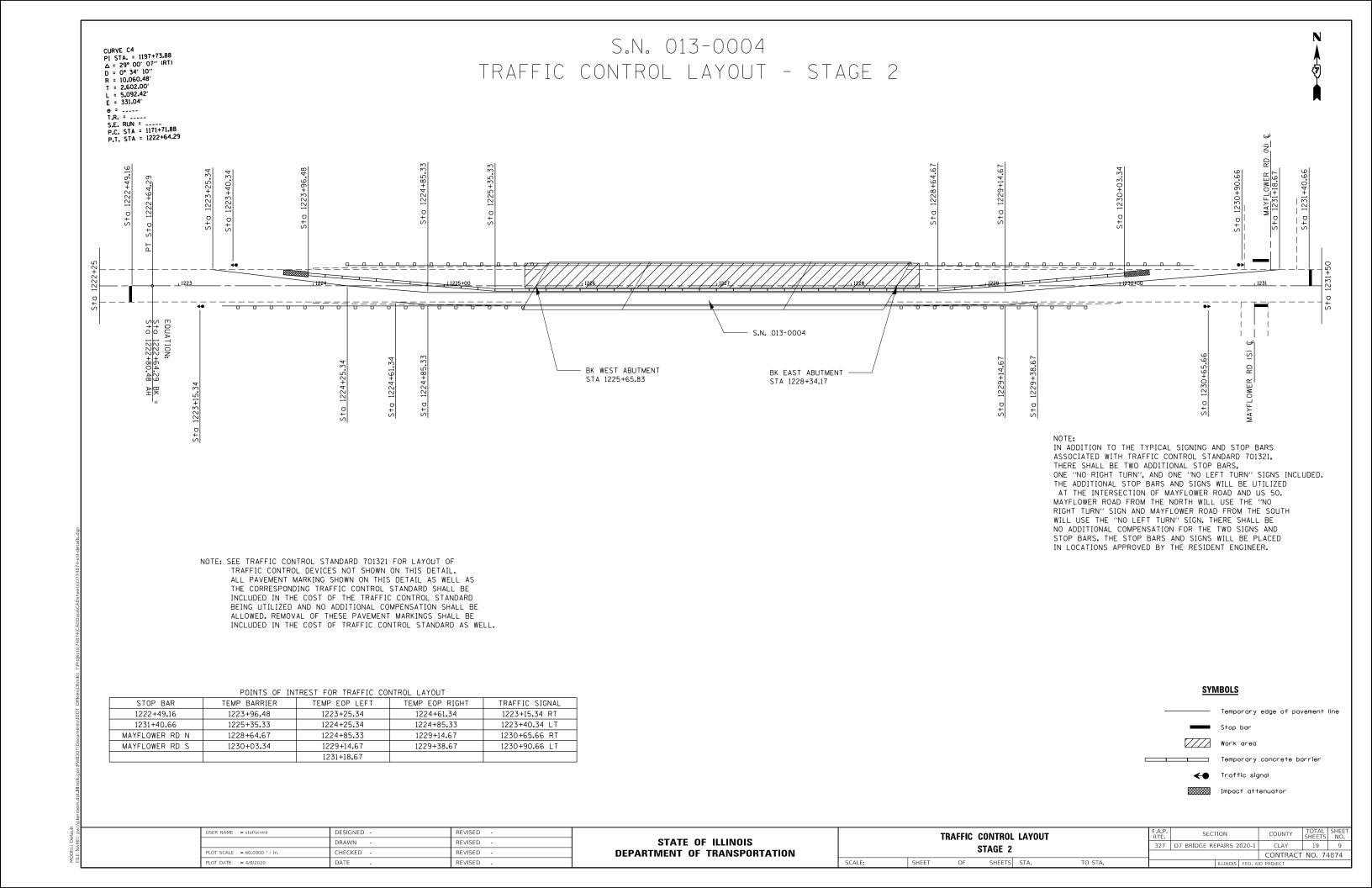
HMA BASE COURSE WIDENING SCALE: OF SHEETS STA.

SECTION COUNTY 327 D7 BRIDGE REPAIRS 2020-1 CLAY 19 7 CONTRACT NO. 74874

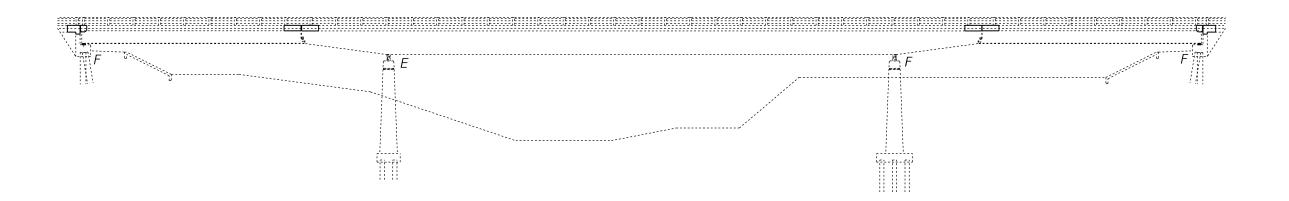
TO STA.

**DEPARTMENT OF TRANSPORTATION** 

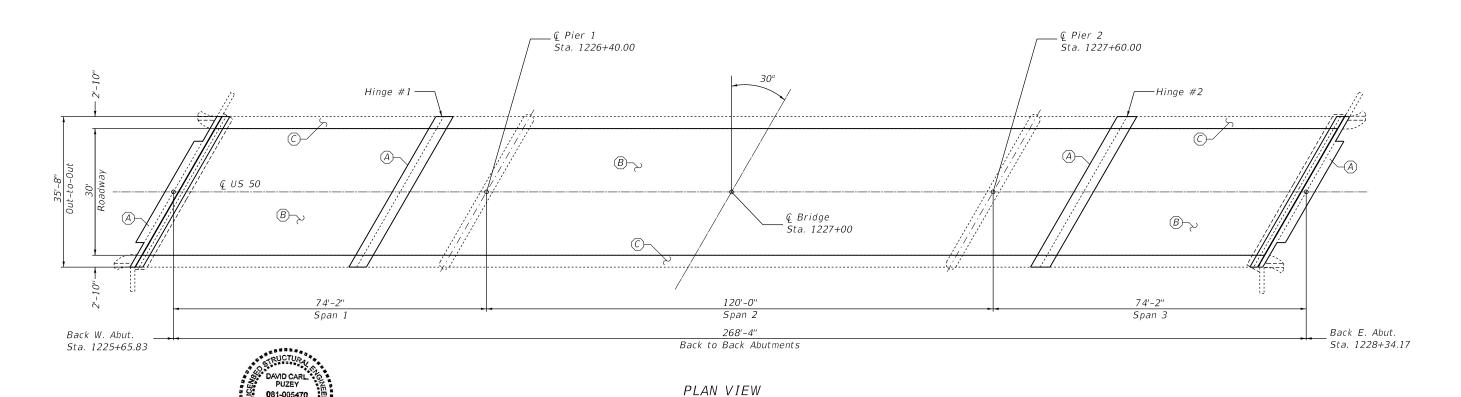








ELEVATION VIEW



- (A) Remove and Replace Exp. Jt.
- (B) Scarification, Deck Slab Repair, Concrete Overlay & Grooving

SCALE:

 $\overline{(C)}$  - Structural Repair of Concrete (Depth  $\leq 5$ ")

USER NAME = steffenmk	DESIGNED -	R. Walker	REVISED	=
	DRAWN -	R. Walker	REVISED	=
PLOT SCALE = 100.0000 ' / in.	CHECKED -		REVISED	=
PLOT DATE = 4/8/2020	DATE -	1/8/2020	REVISED	-

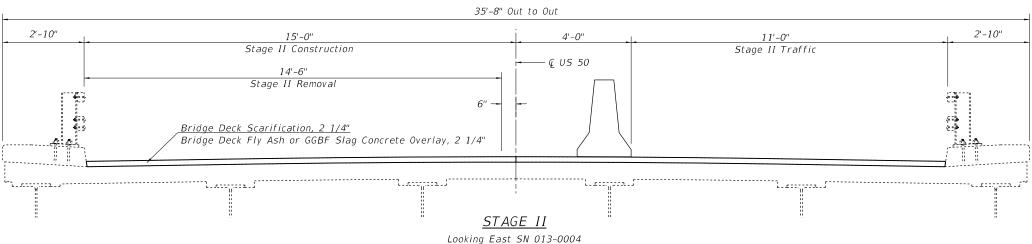
Expires 11-30-2020

Land Pupus

5/7/2020

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GEN	IERAL	PL/	AN &	ELEVATION	I	F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SN 013-0004						327	D7 Bridge Repairs 2020-1	Clay	19	10
		,,,	013-000	77				CONTRACT	NO. 74	1874
HEET 1 OF 10 SHEETS STA. TO STA.					TO STA.		ILLINOIS FED.	AID PROJECT		



### GENERAL NOTES

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

Plans dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or acnchorage system. Cost included with Concrete Removal.

Protective coat shall be applied to new concrete areas adjacent to reconstructed joints and the bridge deck overhangs.

Reinforcement Bars designated (E) shall be epoxy coated.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on the as-built plans.

Synthetic fibers should be added to the Bridge Deck Fly Ash or GGBF Slag Overlay, 2  $1/4^{\prime\prime}$ . See Special Provisions.

The Designer's intent is to repair a maximum width of  $18^{\prime\prime}$  of concrete measured from the face of the curb. Areas of curb outside these limits should be left unrepaired.

Full depth deck slab repairs performed in the exterior bays of the bridge deck (between the parapet walls and the first interior beams) shall be limited to individual lengths no greater than 10'. In these portions of the deck, repair areas longer than 10' shall be divided into segments not greater than 10' in length, and the segments shall be poured in alternating sequence.

Subsequent segments repaired in sequence shall not be removed until 72 hours has elapsed from the end of the previous, adjacent pour and the adjacent pour has attained a minimum modulus of rupture of 650 psi.

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications

when the deck is poured at on ambient temperature other than 50  $^{\circ}\text{F.}$ 

The existing structural steel coating contains lead. The contractor shall take appropriate precautions to deal with the presence of lead on this project.

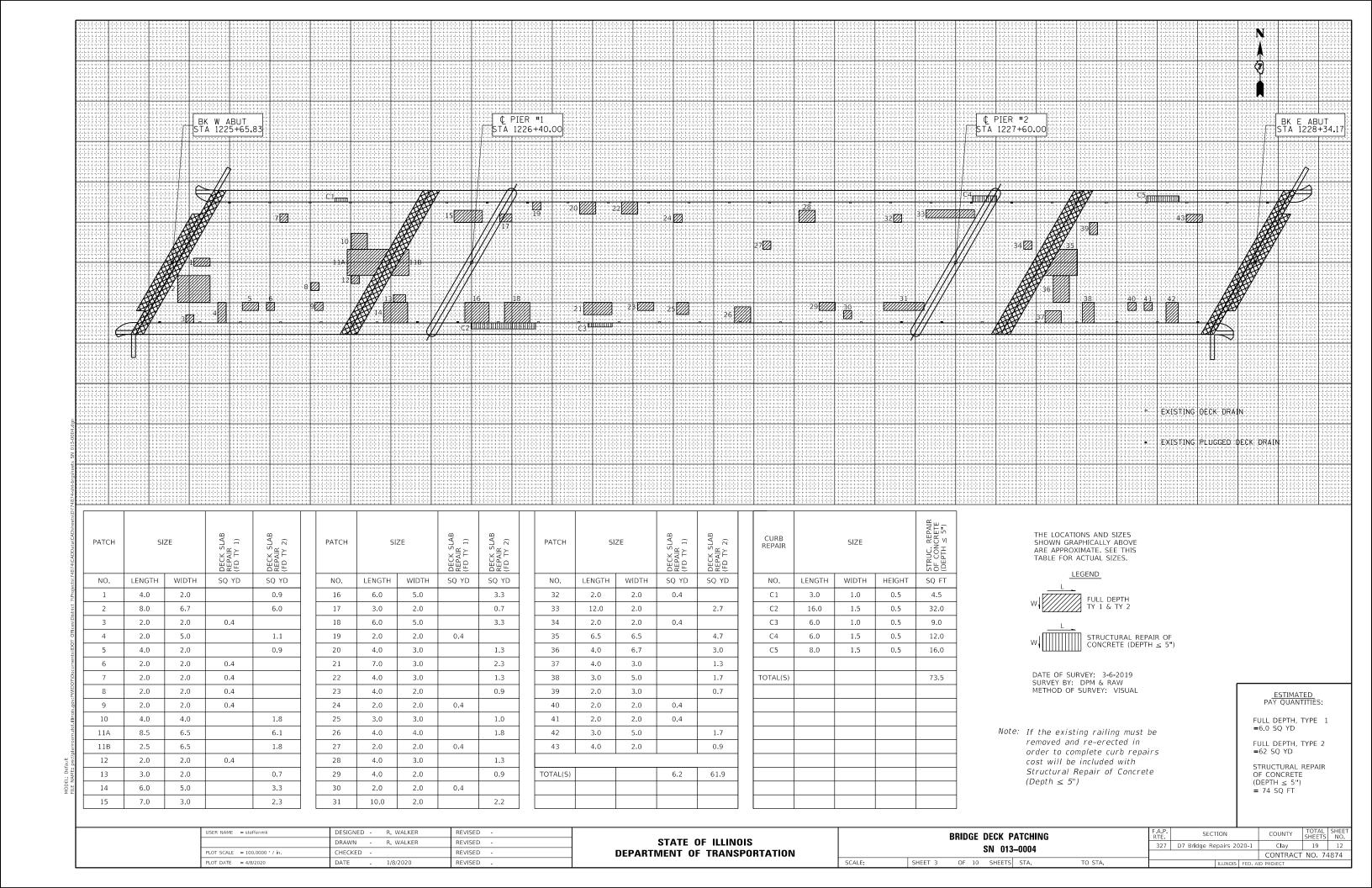
### TOTAL BILL OF MATERIAL

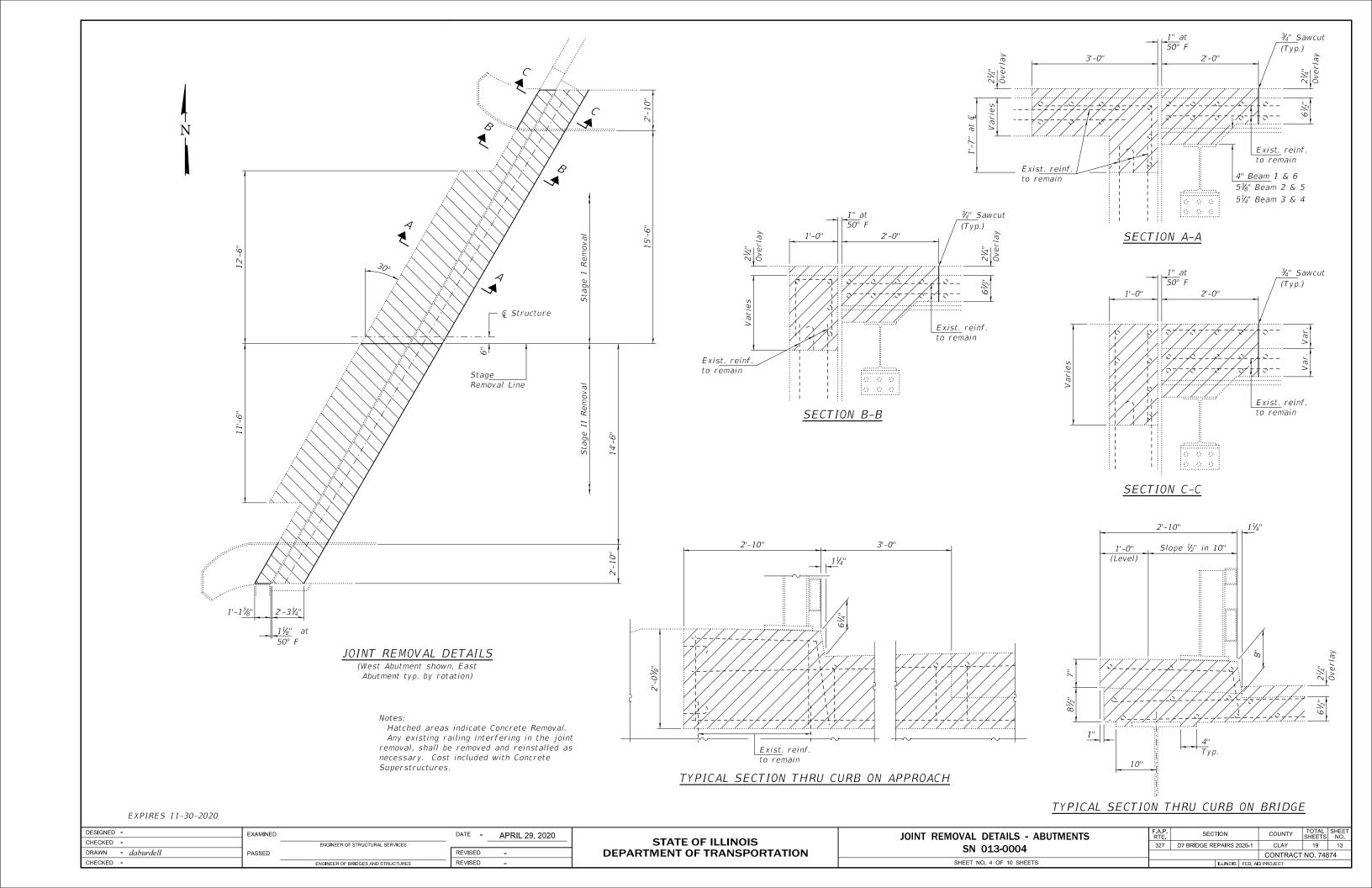
Concrete Superstructure  Cu. Yd. 31.7  Bar Splicers  Each 68  Protective Coat  Sq. Yd. 58  Reinforcement Bars, Epoxy Coated  Preformed Joint Strip Seal  Deck Slab Repair (Full Depth, Type I)  Sq. Yd. 6  Deck Slab Repair (Full Depth, Type II)  Sq. Yd. 6  Deck Slab Repair (Full Depth, Type II)  Sq. Yd. 6  Bridge Deck Scarification 2 1/4"  Sq. Yd. 845  Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"  Sq. Yd. 845  Bridge Deck Grooving  Sq. Yd. 821  Furnishing and Erecting Structural Steel  Pound 2230  Back and Remove Existing Bearings  Each 12	TOTAL BILL OF MATERIAL		
Councrete Superstructure  Sq. Yd. 58  Reinforcement Bars, Epoxy Coated  Pound 3240  Preformed Joint Strip Seal  Pound 3240  Preformed Joint Strip Seal  Pound 3240  Foot 168  Sq. Yd. 6  Deck Slab Repair (Full Depth, Type I)  Sq. Yd. 6  Councrete Sibustructural Repair of Concrete ≤ 5"  Sq. Ft. 74  Bridge Deck Scarification 2 1/4"  Sq. Yd. 845  Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"  Sq. Yd. 845  Bridge Deck Grooving  Sq. Yd. 821  Furnishing and Erecting Structural Steel  Pound 2230  Cack and Remove Existing Bearings  Each 12	ITEM	UNIT	QUANTITY
Bar Splicers  Bar Splicers  Protective Coat  Sq. Yd. 58  Reinforcement Bars, Epoxy Coated  Preformed Joint Strip Seal  Peck Slab Repair (Full Depth, Type I)  Sq. Yd. 6  Peck Slab Repair (Full Depth, Type II)  Sq. Yd. 6  Peck Slab Repair (Full Depth, Type II)  Sq. Yd. 6  Peck Slab Repair of Concrete ≤ 5"  Sq. Yd. 62  Structural Repair of Concrete ≤ 5"  Sq. Yd. 845  Bridge Deck Scarification 2 1/4"  Sq. Yd. 845  Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"  Sq. Yd. 845  Bridge Deck Grooving  Sq. Yd. 821  Furnishing and Erecting Structural Steel  Pound 2230  Back and Remove Existing Bearings  Each 12	Concrete Removal	Cu. Yd.	32
Protective Coat  Reinforcement Bars, Epoxy Coated Pound Reinforcement Bars, Epoxy Coated Preformed Joint Strip Seal Preformed Joint Strip Seal Poeck Slab Repair (Full Depth, Type I) Preformed Joint Strip Seal Protect Slab Repair (Full Depth, Type II) Protect Slab Repair (Full Depth, Type III) Protect Slab Repair of Concrete ≤ 5" Protect Slab Repair of Concrete ≤ 5" Protect Sq. Yd. 62 Pridge Deck Scarification 2 1/4" Pridge Deck Scarification 2 1/4" Pridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Pridge Deck Grooving Protective Coat Protectiv	Concrete Superstructure	Cu. Yd.	31.7
Reinforcement Bars, Epoxy Coated Pound 3240 Preformed Joint Strip Seal Foot 168 Deck Slab Repair (Full Depth, Type I) Sq. Yd. 6 Deck Slab Repair (Full Depth, Type II) Sq. Yd. 62 Structural Repair of Concrete ≤ 5" Sq. Ft. 74 Bridge Deck Scarification 2 1/4" Sq. Yd. 845 Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Sq. Yd. 845 Bridge Deck Grooving Sq. Yd. 821 Furnishing and Erecting Structural Steel Pound 2230 Back and Remove Existing Bearings Each 12	Bar Splicers	Each	68
Preformed Joint Strip Seal Foot 168 Deck Slab Repair (Full Depth, Type I) Sq. Yd. 6 Deck Slab Repair (Full Depth, Type II) Sq. Yd. 6 Deck Slab Repair of Concrete ≤ 5" Sq. Yd. 62 Structural Repair of Concrete ≤ 5" Sq. Yd. 845 Bridge Deck Scarification 2 1/4" Sq. Yd. 845 Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Sq. Yd. 845 Bridge Deck Grooving Sq. Yd. 821 Furnishing and Erecting Structural Steel Pound 2230 Back and Remove Existing Bearings Each 12	Protective Coat	Sq. Yd.	58
Deck Slab Repair (Full Depth, Type I)  Deck Slab Repair (Full Depth, Type II)  Sq. Yd. 62  Structural Repair of Concrete ≤ 5"  Sq. Ft. 74  Bridge Deck Scarification 2 1/4"  Sq. Yd. 845  Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"  Sq. Yd. 845  Bridge Deck Grooving  Sq. Yd. 821  Furnishing and Erecting Structural Steel  Pound 2230  Back and Remove Existing Bearings  Each 12	Reinforcement Bars, Epoxy Coated	Pound	3240
Deck Slab Repair (Full Depth, Type II)  Sq. Yd. 62 Structural Repair of Concrete ≤ 5"  Sq. Ft. 74 Bridge Deck Scarification 2 1/4"  Sq. Yd. 845 Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"  Sq. Yd. 845 Bridge Deck Grooving  Sq. Yd. 821 Furnishing and Erecting Structural Steel  Pound 2230 Back and Remove Existing Bearings  Each 12	Preformed Joint Strip Seal	Foot	168
Structural Repair of Concrete ≤ 5" Sq. Ft. 74  Bridge Deck Scarification 2 1/4" Sq. Yd. 845  Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Sq. Yd. 845  Bridge Deck Grooving Sq. Yd. 821  Furnishing and Erecting Structural Steel Pound 2230  Back and Remove Existing Bearings Each 12	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	6
Bridge Deck Scarification 2 1/4" Sq. Yd. 845 Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Sq. Yd. 845 Bridge Deck Grooving Sq. Yd. 821 Furnishing and Erecting Structural Steel Pound 2230 Back and Remove Existing Bearings Each 12	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	62
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4" Sq. Yd. 845 Bridge Deck Grooving Sq. Yd. 821 Furnishing and Erecting Structural Steel Pound 2230 Back and Remove Existing Bearings Each 12	Structural Repair of Concrete ≤ 5"	Sq. Ft.	74
Bridge Deck Grooving Sq. Yd. 821 Furnishing and Erecting Structural Steel Pound 2230 Fack and Remove Existing Bearings Each 12	Bridge Deck Scarification 2 1/4"	Sq. Yd.	845
Turnishing and Erecting Structural Steel Pound 2230 Tack and Remove Existing Bearings Each 12	Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2 1/4"	Sq. Yd.	845
ack and Remove Existing Bearings Each 12	Bridge Deck Grooving	Sq. Yd.	821
	Furnishing and Erecting Structural Steel	Pound	2230
Anchor Bolts, 1" Each 48	lack and Remove Existing Bearings	Each	12
	Anchor Bolts, 1"	Each	48

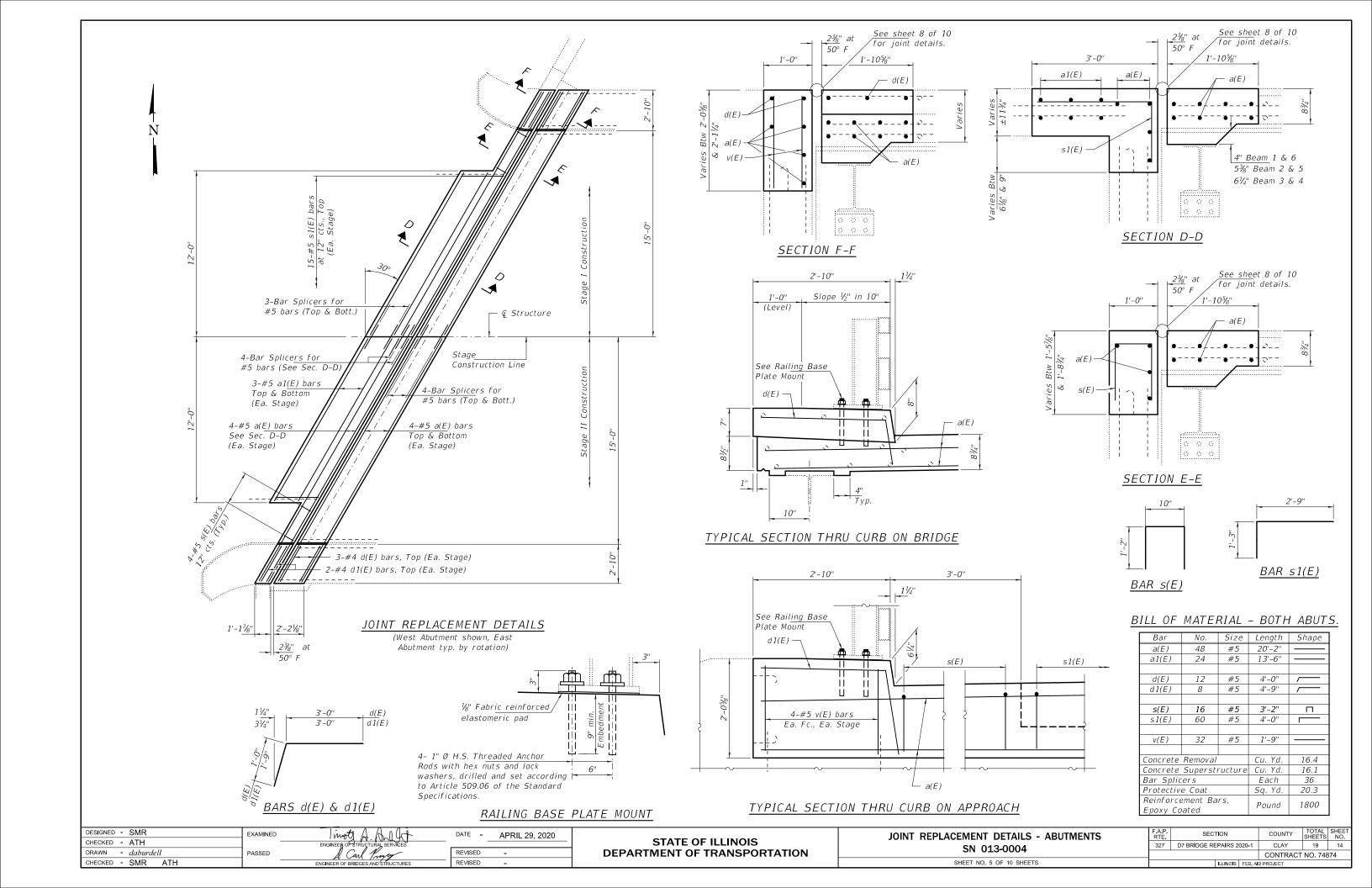
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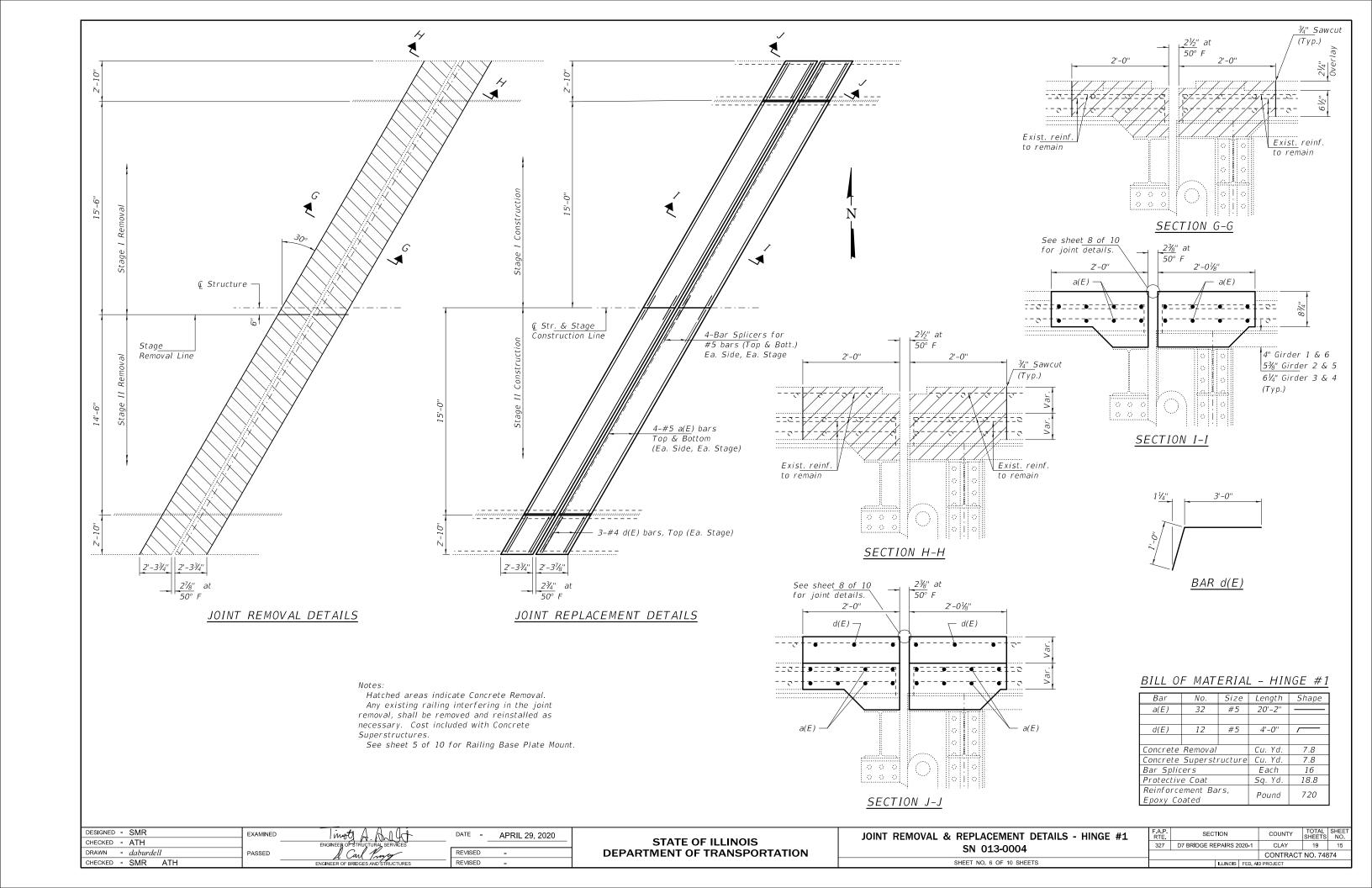
## STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

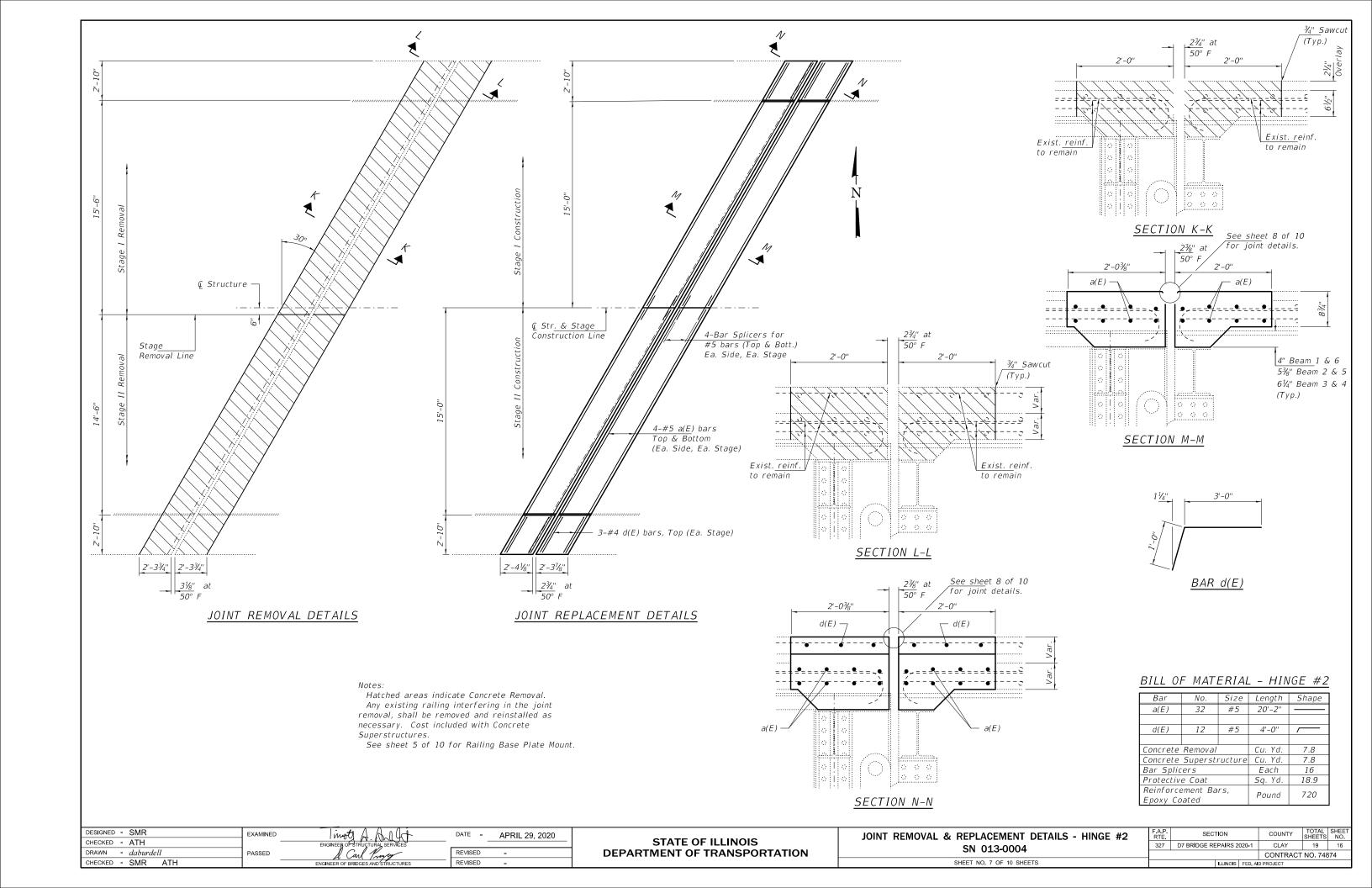
	GENER	AI NIOT	FC &.		F.A.P. RTE	SECTION		COUNTY	TOTAL	SHEE NO.
GENERAL NOTES &						D7 Bridge Repairs 20	20-1	Clay	19	11
 CONSTRUCTION STAGING								CONTRACT	NO. 7	4874
SHEET 2	OF 10	SHEETS	STA.	TO STA.		ILLINOIS	FED. A	ID PROJECT		

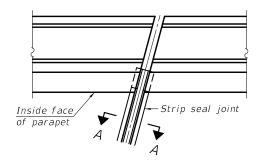




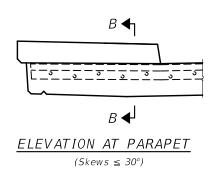




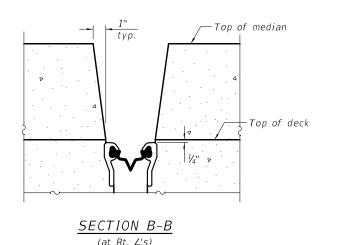




FOR SKEWS ≤ 30° PLAN AT PARAPET



SECTION A-A \* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

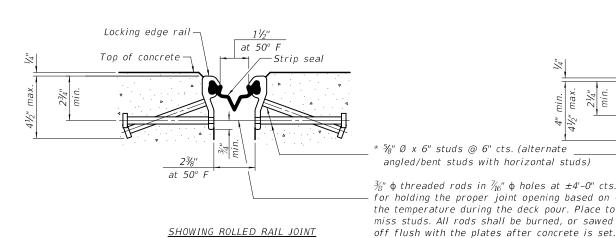
The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the  $4\frac{1}{2}$ " maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be  $\frac{3}{16}$ " and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



2-25-20

Locking edge railat 50° F Top of concrete —Strip seal \*  $\frac{1}{8}$ " Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs) at 50° F  $\frac{3}{6}$ "  $\phi$  threaded rods in  $\frac{1}{16}$ "  $\phi$  holes at  $\pm 4$ '-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to

SHOWING WELDED RAIL JOINT

\*\* Back gouge not required if complete joint penetration is verified by mock-up.

# <u>ROLLED</u> WELDED RAIL (EXTRUDED) RAIL

### LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

### BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	168

### EJ-SS1 LT30/REPS

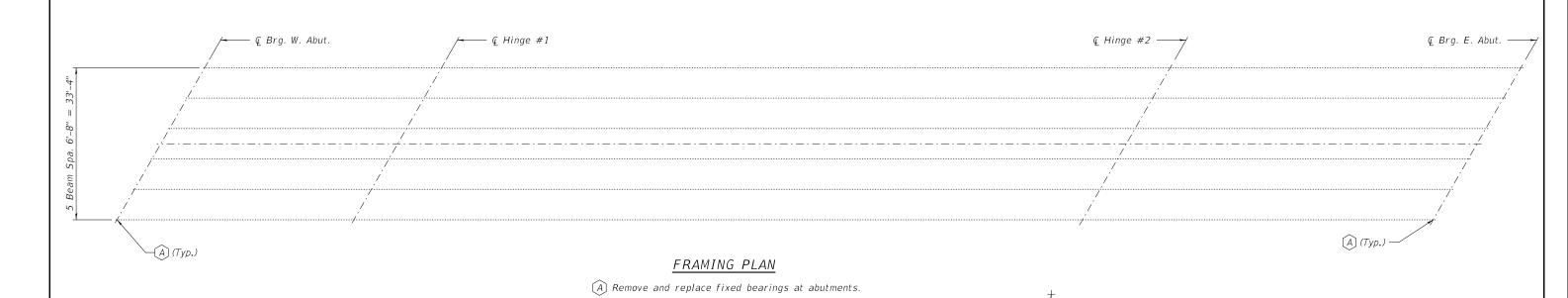
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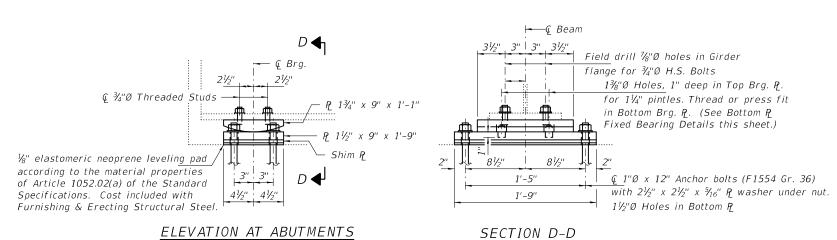
### **STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

### PREFORMED JOINT STRIP SEAL SN 013-0004 SHEET NO. 8 OF 10 SHEETS

LOCKING EDGE RAILS

F.A.P. RTE	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
327	D7 BRIDGE REPAIRS 2	020-1	CLAY	19	17
		CONTRACT	NO. 748	374	
	II I INOIC	D DDO IEGE			





♀ 1" deep holes tapped for ¾" Threaded Studs ∠ P<sub>1</sub> 1¾" × 9" × 1'-1" PLAN - TOP PLATE

FIXED BEARINGS

PLAN - BOTTOM PLATE FIXED BEARINGS

P\_ 1½" x 9" x 1'-9"

Ç 1¾"Ø Holes 1" deep

for 11/4"Ø Pintles

### BEAM REACTIONS TABLE

## AT TEMP. SUPPORTS

		Abutments
R₽	(K)	26
R Ł	(K)	34
Imp.	(K)	10
R (Total)	(K)	70

### NOTES

FIXED BEARINGS

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

All new structural steel and bearing assemblies shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

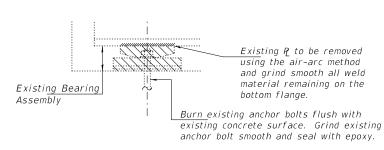
Min. jack capacity = 36 Tons.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

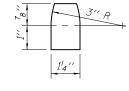
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Cost of bearing assemblies is included with Furnishing and Erecting Structural Steel. Fasteners shall be high strength bolts. Bolts  $\frac{3}{4}$ "Ø, open holes  $\frac{13}{16}$ "Ø, unless otherwise noted.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the special provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".



### EXISTING BEARING REMOVAL DETAIL Cost included with Jack and Remove Existing Bearings.



¶ 1½"Ø Holes for

1"Ø Anchor Bolts

### PINTLE

### BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	2230
Jack and Remove Existing Bearings	Each	12
Anchor Bolts, 1"	Each	48

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DRAWN - daburdell	PASSED	& Carl Prayey	REVISED -	DEPARTMENT OF TRANSPORTATION			CONTRACT NO. 7487	′4
CHECKED - SMR ATH		ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET NO. 9 OF 10 SHEETS	ILLINOIS FED, AIG	D PROJECT	

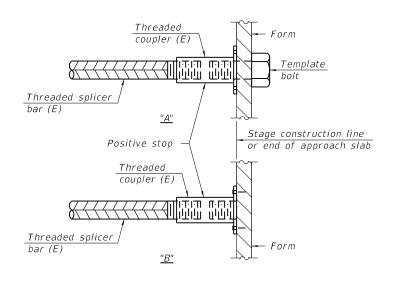
### STANDARD BAR SPLICER ASSEMBLY

(All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length +  $1\frac{1}{2}$ " + thread length

\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

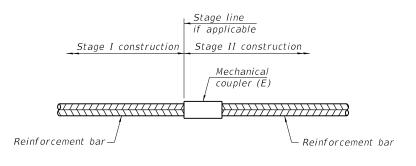
Location	Bar size	No. assemblies required	Minimum Iap length
013-0004	#5	68	3'-0"



### INSTALLATION AND SETTING METHODS

"A": Set bar splicer assembly by means of a template bolt "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.

(E): Indicates epoxy coating.



### STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

### NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

1-1-2020

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PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO.013-0004

SHEET 10 OF 10 SHEETS

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